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<u>IN THE CLAIMS</u>:

Please amend the claims as set forth herein:

1. (Currently Amended) A method for converting wavelength of a signal beam combined to a pump beam, the method comprising of the steps of:

providing a channel type polymeric waveguide including nonlinear polymer <u>having a parallelogram-shaped metal plate electrode between a polymeric bottom cladding and a polymeric top cladding</u> in the middle of the waveguide;

poling the polymer along a predetermined direction by applying a voltage to the polymeric wavegiude; and

making the signal beam combined to the pump beam pass through the polymer waveguide in which the polymer is in <u>a</u> poled state.

2. (Original) The method as recited in claim 1, further comprising the steps of:

making the pump beam pass through a polymeric mode converter before the signal beam is combined to the pump beam; and

combining the signal beam and the pump beam at a direction combining means after the pump beam passes through the polymeric mode converter.

3. (Currently Amended) The method as recited in claim 1, wherein, during the polymer poling step, the voltage is applied in a direction perpendicular to the direction in which the signal beam <u>passes</u> ~~pass~~ through the polymer waveguide.

4. (Currently Amended) A wavelength converter for converting wavelength of a signal beam combined to a pump beam, comprising:

a mode converting region for converting a mode of the pump beam;

a direction combining region for combining the signal beam to the pump beam; and

a wavelength converting region for converting the wavelength of the signal beam combined to the pump beam,

wherein the mode converting region and the wavelength converting region are formed as integrated by nonlinear polymeric material having a parallelogram-shaped metal plate electrode between a polymeric bottom cladding and a polymeric top cladding to construct a polymeric waveguide extended along a propagation direction, and the wavelength converting region is manufactured by including voltage applying means for applying a voltage to pole the polymer to a predetermined direction.

5. (Currently Amended) The wavelength converter as recited in claim 4, wherein the polymeric waveguide is formed to show a channel type shape having a rectangular cross-section,

the polymeric waveguide is wrapped by a cladding from the mode converting region to the wavelength converting region, and

~~the~~ a side surface of the mode converting region is exposed at an input side and ~~the~~ a side surface of the wavelength converting region is exposed at an output side.

6. (Currently Amended) The wavelength converter as recited in claim 5, wherein the mode converting region is formed such that an ~~the~~ area of the channel type shape from the exposed side to the boundary with the wavelength converting region ~~vary~~ varies gradually.

7. (Currently Amended) The wavelength converter as recited in claim 5, wherein the mode converting region is formed such that an ~~the~~ area of the channel type shape from the exposed side to the boundary with the wavelength converting region is fixed and the mode of the pump beam does not vary.

8. (Currently Amended) The wavelength converter as recited in claim 4, wherein the voltage applying means of the nonlinear polymer includes a metal ~~electrodes~~ electrode that is vacuum-evaporated to the nonlinear polymeric ~~wavelength~~ waveguide.

9. (Withdrawn) A method for manufacturing a wavelength converter for converting wavelength of a signal beam combined to a pump beam, by using nonlinear polymeric material, the method comprising the steps of:

shaping the nonlinear polymeric material to be long;

by using the shaped long nonlinear polymeric material as a core, wrapping the core with a cladding with leaving both ends exposed; and

forming metal electrodes connected to the core of the nonlinear polymeric material.

10. (Withdrawn) The method as recited in claim 9, wherein the step of wrapping includes the steps of:

providing a bottom cladding prior to the step of shaping; and

providing a top cladding after the step of shaping.

11. (Withdrawn) The method as recited in claim 9, wherein the step of forming the metal electrodes includes the step of vacuum-evaporating metal on down facing surfaces of the core of the nonlinear polymeric material and a silicon substrate.

12. (Withdrawn) The method as recited in claim 9, wherein, during the step of shaping, a mode converting region for converting mode of the pump beam, a direction combining region for combining the signal beam to the pump beam, and a wavelength converting region for converting the wavelength of the signal beam combined to the pump beam are formed simultaneously.

13. (Withdrawn) The method as recited in claim 12, wherein, during the step of shaping, the mode converting region and the wavelength converting region are formed as integrated such that they constructs a polymeric waveguide that forms a line along wave propagation direction.

14. (Withdrawn) The method as recited in claim 13, wherein, during the step of shaping, the polymer waveguide is formed as a channel type shape having rectangular cross-section.

15. (Withdrawn) The method as recited in claim 14, wherein, during the step of shaping, the area of the channel type shape from the exposed side surface of the mode converting region to the boundary with the wavelength converting region is formed to vary gradually.

16. (Withdrawn) The method as recited in claim 14, wherein, during the step of shaping, the area of the channel type shape from the exposed side surface of the mode converting region to the boundary with the wavelength converting region is formed to be fixed.

17. (New) The method as recited in claim 1, wherein said parallelogram-shaped metal plate electrode has a substantially square lateral cross-section.

18. (New) The wavelength converter as recited in claim 4, wherein said parallelogram-shaped metal plate electrode has a substantially square lateral cross-section.